	Application No.	Applicant(s)
Notice of Allowability	10/811,095	LEE ET AL.
	Examiner	Art Unit	
	B. James Peikari	2189	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the telephone interview held on September 13, 2007 and proposed amendment thereafter.*

2. ☒ The allowed claim(s) is/are *1-8, 17-37 and 39-49.*

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the

           International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of

        Paper No./Mail Date _____ .

  Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☐ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

EXAMINER'S AMENDMENT

1.   An examiner's amendment to the record appears below. Should the changes

and/or additions be unacceptable to applicant, an amendment may be filed as provided

by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be

submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview

with Shannen C. Delaney (#51,605) on September 13, 2007.

The application has been amended as follows:

[SEE ATTACHED]

2.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to James Peikari whose telephone number is (571) 272-

4185. The examiner is generally available between 7:00 am and 7:30 pm, EST,

Monday through Wednesday, and between 5:30 am and 4:00 pm on Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Reginald Bragdon, can be reached at (571) 272-4204. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center at 866-217-9197 (toll-free).

B. James Peikari
Primary Examiner
Art Unit 2189
9/16/07

PATENTS
112056-0152U
P01-1717.02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re The Application of:	)	
Herman Lee et al.	)	
	)	
Serial No.: 10/811,095	)	Examiner: Peikari, Behzad
	)	
Filed: March 26, 2004	)	
	)	Art Unit: 2189
For: SYSTEM AND METHOD FOR	)	
PROXYING DATA ACCESS	)	
COMMANDS IN A CLUS-	)	
TERED STORAGE SYSTEM	)	

Cesari and McKenna, LLP
88 Black Falcon Avenue
Boston, MA 02210
September 16, 2007

CERTIFICATE OF EFS WEB TRANSMISSION

I hereby certify that the following paper is being EFS WEB transmitted to the Patent and Trademark Office on September 16, 2007.

_____//_____.

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

AMENDMENT

This Amendment is filed in response to the Examiner Interview on September 13, 2007. All objections and rejections are traversed.

IN THE CLAIMS:

1   1. (Previously Presented) A method for proxying data access commands from a first

2   storage system to a second storage system in a storage system cluster, comprising:

3   in response to a failure in communication between a client and the second storage

4   system, receiving, at a proxy port on the first storage system, a data access command at

5   the first storage system that is directed to the second storage system;

6   forwarding the received data access command to the second storage system via a

7   cluster interconnect;

8   processing the data access command at the second storage system;

9   returning a response from the second storage system to the first storage system via

10   the cluster interconnect; and

11   sending a response to the data access command to the client from the first storage

12   system.

1   2. (Previously Presented) The method of claim 1 wherein the storage systems are stor-

2   age appliances.

1   3. (Currently Amended) The method of claim ~~2~~ 1 wherein the proxy port comprises a

2   physical port.

1   4. (Currently Amended) The method of claim ~~2~~ 1 wherein the proxy port comprises a

2   virtual port associated with a physical port.

1   5. (Original) The method of claim 1 wherein the response comprises requested read

2   data.

6. (Original) The method of claim 1 wherein the response comprises an acknowledge-
ment of a write operation.

7. (Original) The method of claim 1 wherein the response comprises a predetermined set
of read data.

8. (Original) The method of claim 1 wherein the cluster interconnect comprises a direct
link between the first storage system and the second storage system.

9.-16. (Cancelled)

17. (Previously Presented) A method for proxying data access commands in a first stor-
age system to a second system in a storage system cluster, comprising the:
    in response to a failure in communication between a client and the second storage
system, receiving, at a proxy port on the first storage system, a data access command at
the first storage system that is directed to the second storage system;
    analyzing a received data access command at the first storage system;;
    forwarding the received data access command to the second storage system; and
    processing the received data access command at the second storage system.

18. (Previously Presented) The method of claim 17 further comprising;
    returning a response from the second storage system to the first storage system;
and
    sending a response to the data access command to the client from the first storage
system.

19. (Previously Presented) The method of claim 17 wherein the step of forwarding fur-
ther comprises forwarding the data access command to the second storage system via a
cluster interconnect.

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20. (Original) The method of claim 19 wherein the cluster interconnect comprises a fibre channel link.

21. (Original) The method of claim 19 wherein the cluster interconnect comprises a direct link between the first storage system and the second storage system.

22. (Cancelled)

23. (Previously Presented) The method of claim 17 wherein the proxy port comprises a physical port.

24. (Previously Presented) The method of claim 17 wherein the proxy port comprises a virtual port associated with the physical port.

25. (Original) The method of claim 18 wherein the response comprises requested read data.

26. (Original) The method of claim 18 wherein the response comprises an acknowledgement of the write operation.

27. (Currently Amended) A computer readable ~~media~~storage device ~~, including~~ having stored thereon program instructions for executing on a computer, for proxying data access commands from a first storage system to a second storage system in a storage system cluster, wherein the program instructions when executed by the computer perform ~~the computer readable media including instructions for performing~~ the steps of:

  in response to a failure in communication between a client and the second storage system, receiving, at a proxy port on the first storage system, a data access command at the first storage system that is directed to the second storage system;

9   forwarding the received data access command to the second storage system via a

10   cluster interconnect;

11   processing the data access command at the second storage system;

12   returning a response from the second storage system to the first storage system via

13   the cluster interconnect; and

14   sending a response to the data access command to the client from the first storage

15   system.

1   28. (Currently Amended) A system for proxying data access commands from a first

2   storage system to a second storage system connected via a cluster interconnect, the sys-

3   tem comprising:

4   in response to a failure in communication between a client and the second storage

5   system, ~~means for~~ a proxy port configured to receive ~~receiving~~ a data access command at

6   the first storage system that is directed to the second storage system;

7   means for forwarding the received data access command to the second storage

8   system via a cluster interconnect;

9   means for processing the data access command at the second storage system;

10   means for returning a response from the second storage system to the first storage

11   system via the cluster interconnect; and

12   means for sending a response to the data access command to the client from the

13   first storage system.

1   29. (Currently Amended) The system of claim 28 wherein storage systems are storage

2   appliances ~~and the data access command is received at a proxy port associated with the~~

3   ~~first storage appliance~~.

1   30. (Currently Amended) The system of claim ~~29~~ 28 wherein the proxy port comprises a

2   physical port.

1   31. (Currently Amended) The system of claim ~~29~~ 28 wherein the proxy port comprises a

2   virtual port associated with a physical port.

1   32. (Previously Presented) The system of claim 28 wherein the response comprises re-

2   quested read data.

1   33. (Previously Presented) The system of claim 28 wherein the response comprises an

2   acknowledgement of a write operation.

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1   34. (Previously Presented) The system of claim 28 wherein the response comprises a

2   predetermined set of read data.

1   35. (Currently Amended) A method for proxying data access commands from a first

2   storage system to a second storage system in a storage system cluster, the method com-

3   prising:

4   in response to a failure in communication between a client and the second storage

5   system, receiving, at a proxy port on the first storage system, a data access command at

6   the first storage system that is directed to the second storage system;

7   forwarding a data access command from the first storage system to the second

8   storage system;

9   processing the data access command at the second storage system; and

10   returning a response from the second storage system to the first storage system.

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1   36. (Previously Presented) The method of claim 35 further comprises sending a re-

2   sponse to the data access command from the first storage system.

1   37. (Previously Presented) The method of claim 35 wherein the data access command is

2   forwarded via a cluster interconnect.

38. (Cancelled)

39. (Currently Amended) The method of claim 35 further comprises returning the response from the first storage system to a-the client.

40. (Previously Presented) The method of claim 39 wherein the response is returned via the cluster interconnect.

41. (Previously Presented) A method for proxying data access commands from a first storage system to a second storage system in a storage system cluster, comprising:

receiving a data access command at the first storage system;

determining the data access command was received at a proxy port on the first storage system;

passing the data access command to a local virtual adapter;

forwarding the received data access command to the second storage system via a cluster interconnect;

processing the data access command at the second storage system;

returning a response from the second storage system to the first storage system via the cluster interconnect; and

sending a response to the data access command to a client from the first storage system.

42. (Previously Presented) The method of claim 41, wherein the data access command is directed to the second storage system.

43. (Previously Presented) The method of claim 41, wherein the proxy port comprises a physical port.

1   44. (Previously Presented) The method of claim 41, wherein the proxy port comprises a

2   virtual port.

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1   45. (Previously Presented) The method of claim 41, wherein the first storage system re-

2   ceives the data access command in response to a communication failure between the cli-

3   ent and the second storage system.

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1   46. (Previously Presented) A system for proxying data access commands from a first

2   storage system to a second storage system in a storage system cluster, comprising:

3   a proxy port on the first storage system, the proxy port to receive a data access

4   command that is directed to the second storage system in response to a failure in commu-

5   nication between a client and the second storage system;

6   a local virtual adapter on the first storage system, the local virtual adapter to for-

7   ward the received data access command to the second storage system via a cluster inter-

8   connect;

9   a processor on the second storage system, the processor configured to process the

10   data access command at the second storage system;

11   a partner virtual adapter on the second storage system, the partner virtual adapter

12   to return a response from the second storage system to the first storage system via the

13   cluster interconnect; and

14   a network adapter to send a response to the data access command to a client from

15   the first storage system.

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1   47. (Previously Presented) The system of claim 46, wherein the first storage system fur-

2   ther comprises a local virtual target module to determine the data access command was

3   received at a proxy port on the first storage system, and the local virtual target module to

4   pass the data access command to the local virtual adapter.

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1   48. (Previously Presented) The system of claim 46, wherein the proxy port comprises a

2   physical port.

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1   49. (Previously Presented) The system of claim 46, wherein the proxy port comprises a

2   virtual port.

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REMARKS

This Amendment is filed in response to the Examiner Interview on September 13, 2007. All objections and rejections are traversed.

Claims 1-8, 17-37, and 39-49 are currently pending.

All independent claims are believed to be in condition for allowance.

All dependent claims are believed to be dependent from allowable independent claims, and therefore in condition for allowance.

Favorable action is respectfully solicited.

In the event that the Examiner deems personal contact desirable in disposition of this case, the Examiner is encouraged to call the undersigned attorney at (617) 951-3067.

Please charge any additional fee occasioned by this paper to our Deposit Account No. 03-1237.

Respectfully submitted,

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